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Kharghar, Navi Mumbai - 410 210.

Science & Humanities

Vision:-"To excel in the field of technology by creating technocrats with value-based professionalism"

Mission:- To provide technical expertise to fulfill the needs of the industry.

To impact ethical values & professional responsibilities.

To achieve excellence in academics.

Subject: - Basic Physics **Date:-1/9/23**

Assignment No:-1

Topic Name:-Units and Measurement

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1. Define unit ,what are the requirement of good unit?
2. Define Fundamental quantities and derived quantities.
3. Define absolute error , relative error, percentage error.
4. Classify the following quantities as fundamental & derived Quantities.
   Length, Force, temperature, mass, volume, acceleration, area
5. State dimensions of density, acceleration, work, momentum, Pressure
6. Convert the following :
   - 2.5 Kg to__ gm,
   - 5 GHz to __Hz,
   - 90 mm to__m,
   - 100 µF to __F,
   - 1200 nF to ___F
7. Express the result of following in significant figure:-$325*10^{8}*0.620$
8. Find the number of significant figure in the following measurement:-
   - 0.031400,0.
   - 0314,$6.52*10^{-34}$,
   - $6.6200*10^{-34}$

9. What is the SI unit of resistance, capacitance, Inductance, impulse, power, Momentum, potential energy?

Date of Submission: -04/09/23

Assign By :- Prof. Archana G. & Prof . Mangal N.

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Subject: - Basic Physics **Date:-5/9/23**

Assignment No:-2

Topic Name:- Electricity

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1. Define electric current?
2. State properties of electric lines of force.
3. State Coulomb's inverse square law of electrostatic & hence define one Coulomb.
4. Define the terms electric field, electric lines of force, Electric flux density, Charge of one Coulomb.
5. State the relation between flux density (D) and electric field intensity (E).
6. Two charges of 140μC and -200μC are placed 1 m apart in air. Determine the position of the point in between them where the resultant potential is zero.

Date of Submission: -06/09/23

Assign By :- Prof. Archana G. & Prof . Mangal N.

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Subject: - Basic Physics **Date:-07/09/23**

Assignment No:-3

Topic Name: - Magnetism

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1. Define Resistivity or specific resistance of a material and state its SI unit.
2. State Ohm's law.
3. Derive an expression for equivalent resistance when number of resistance is connected in series & parallel.
4. State properties of magnetic lines of forces.
5. Define magnetic Flux, Magnetic flux density or magnetic induction, Magnetic field intensity
6. Explain heating effect of electric current (Joule's law) ?
7. An electric equipment draws a current of 1 Amp when connected across 150 V supply what current will it draw when connected across 220 V supply?
8. A 5m long wire has diameter 0.4mm if its resistance is 10 Ω(Ohm) calculate it's resistivity and conductivity.

Date of Submission: -11/09/23

Assign By :- Prof. Archana G. & Prof . Mangal N.

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Subject: - Basic Physics **Date:-5/10/23**

Assignment No:-4

Topic Name:- Semiconductor

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1. Differentiate between Conductor, Semiconductor, and insulator.
2. Define Intrinsic and extrinsic semiconductor.
3. State and explain types of Semiconductor.
4. Explain the forward and reverse biased characteristic of PN junction diode
5. State applications of PN junction Diode.

Date of Submission: 09/10/23

Assign By :- Prof. Archana G. & Prof . Mangal N.

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Subject: - Basic Physics **Date:-30/10/23**

Assignment No:-5

Topic Name:- Heat and optics

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1. Distinguish between Heat and Temperature.
2. Differentiate between Conduction ,Convection and Radiation
3. Explain Good & bad conductor of heat.
4. State law of thermal conductivity. Define coefficient of thermal conductivity state its SI unit.
5. State Boyle's law ,Charles law and Gay Lussac's law
6. State relation between two specific heats of gas (Cp and Cv) or Derive Mayor's relation.
7. Differentiate between types of optical fiber.
8. Explain Total internal Reflection (TIR)
9. Differentiate between Reflection and refraction of light.
10. Explain the structure (construction) of optical fiber.
11. Find velocity of light in glass whose reflective index is 1.6.
12. Find an angle of incidence if angle of refraction is 30° for a glass having refractive index 1.5.
13. Convert 300°K into °F,22°C into °F,44°C into °A or °K, 110°F into °K

Date of Submission: -06/11/23

Assign By :- Prof. Archana G. & Prof . Mangal N.